

## Agenda

**Meeting: Elizabeth Line Committee**

**Date: Thursday 25 November 2021**

**Time: 2.00pm**

**Place: Conference Rooms 1&2, Ground Floor, Palestra, 197 Blackfriars Road, London SE1 8NJ**

### Members

Heidi Alexander (Chair)

Anne McMeel (Vice-Chair)

Prof Greg Clark CBE

Dr Nelson Ogunshakin OBE

Mark Phillips

Kathryn Cearns OBE (Department for Transport Observer)

Sarah Atkins

Copies of the papers and any attachments are available on [tfl.gov.uk How We Are Governed](https://www.tfl.gov.uk/How-We-Are-Governed).

This meeting will be open to the public and webcast live on [TfL YouTube channel](#), except for where exempt information is being discussed as noted on the agenda.

There is access for disabled people and induction loops are available. A guide for the press and public on attending and reporting meetings of local government bodies, including the use of film, photography, social media and other means is available on [www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf](https://www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf).

### Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Sue Riley, Secretariat Officer; [sueriley@tfl.gov.uk](mailto:sueriley@tfl.gov.uk)

For media enquiries please contact the TfL Press Office; telephone: 0343 222 4141; email: [PressOffice@tfl.gov.uk](mailto:PressOffice@tfl.gov.uk)

Howard Carter, General Counsel  
Wednesday 17 November 2021

**Agenda  
Elizabeth Line Committee  
Thursday 25 November 2021**

**1 Apologies for Absence and Chair's Announcements**

**2 Declarations of Interest**

General Counsel

**Members are reminded that any interests in a matter under discussion must be declared at the start of the meeting, or at the commencement of the item of business.**

**Members must not take any part in any discussion or decision on such a matter and, depending on the nature of the interest, may be asked to leave the room during the discussion.**

**3 Minutes of the Meeting of the Committee held on 30 September 2021  
(Pages 1 - 6)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 30 September 2021 and authorise the Chair to sign them.**

**4 Matters Arising, Actions List and Use of Delegated Authority  
(Pages 7 - 10)**

General Counsel

**The Committee is asked to note the updated actions list and use of delegated authority.**

**5 Safety Update (Pages 11 - 14)**

Chief Executive Officer, Crossrail

**The Committee is asked to note the paper.**

**6 Project Status Update** (Pages 15 - 18)

Chief Executive Officer, Crossrail

**The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda.**

**7 Elizabeth Line Readiness** (Pages 19 - 22)

Chief Operating Officer, Elizabeth line

**The Committee is asked to note the paper.**

**8 Finance and Risk Update** (Pages 23 - 26)

Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground.

**The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda.**

**9 Project Representative Report** (Pages 27 - 28)

Chief Executive Officer, Crossrail

**The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda.**

**10 Elizabeth Line Programme Assurance Update** (Pages 29 - 46)

Director of Risk and Assurance

**The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda**

**11 Enterprise Risk Update - Opening of the Elizabeth Line (ER14)**  
(Pages 47 - 48)

Managing Director, London Underground

**The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda.**

**12 Members' Suggestions for Future Discussion Items** (Pages 49 - 52)

General Counsel

**The Committee is asked to note the forward plan and is invited to raise any suggestions for future discussion items for the forward plan and for informal briefings.**

**13 Any Other Business the Chair Considers Urgent**

**The Chair will state the reason for urgency of any item taken.**

**14 Date of Next Meeting**

Thursday, 26 January 2022 at 9.00am.

**15 Exclusion of Press and Public**

**The Committee is recommended to agree to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), in order to consider the following items of business.**

**Agenda Part 2**

**Papers containing supplemental confidential or exempt information not included in the related item on Part 1 of the agenda.**

**16 Project Status Update** (Pages 53 - 56)

**Exempt supplemental information relating to the item on Part 1.**

**17 Finance and Risk Update** (Pages 57 - 64)

**Exempt supplemental information relating to the item on Part 1.**

**18 Project Representative Report** (Pages 65 - 98)

**Exempt supplemental information relating to the item on Part 1.**

**19 Elizabeth Line Programme Assurance Update** (Pages 99 - 130)

**Exempt supplemental information relating to the item on Part 1.**

**20 Enterprise Risk Update - Opening of the Elizabeth line (ER14)**  
(Pages 131 - 136)

**Exempt supplemental information relating to the item on Part 1.**

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## Transport for London

### Minutes of the Elizabeth Line Committee

10am, Thursday 30 September 2021

#### Members

Heidi Alexander (Chair)  
Anne McMeel (Vice-Chair)  
Sarah Atkins (non-voting Member)  
Professor Greg Clark CBE (via Teams)  
Dr Nelson Ogunshakin OBE (via Teams)  
Mark Phillips

#### Government Representative

Kathryn Cearns OBE

#### Executive Committee

Andy Byford	Commissioner
Howard Carter	General Counsel
Mark Wild	Chief Executive Officer, Crossrail

#### Staff

Mushtaq Ali	Interim Head of Internal Audit
Carole Bardell-Wise	Health, Safety and Quality Environment Director
Susan Beadles	Head of Legal Services and Company Secretary, Crossrail
Lorraine Humphrey	Interim Director of Risk and Assurance
Maureen Kirk	Senior Internal Audit Manager
Rachel McLean	Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground
Howard Smith	Chief Operating Officer, Elizabeth line
Stuart Westgate	Head of Programme Assurance, Crossrail
Sue Riley	Secretariat Officer

#### Other Attendees

TC Chew	Chair of Crossrail Independent Investment Programme Advisory Group (IIPAG) Sub-Group
Stephen Hill	Jacobs, Project Representative
Florence Julius	KPMG Observer
Michael Kent	KPMG Observer

### 63/09/21 Apologies for Absence and Chair's Announcements

The Chair welcomed everyone to the meeting. While there were no apologies for absence from Members, only those attending in person counted toward the quorum.

This was the first meeting of the Committee held in person since the coronavirus pandemic. Due to space restrictions, some staff also attended the meeting virtually through Microsoft Teams. The meeting was also webcast to TfL's YouTube channel.

The Chair advised the Committee that TfL and the Department for Transport, as Joint Sponsors, had engaged KPMG to continue its work from 2019/20 to assess Crossrail cost scenarios to support funding discussions. The work was focused on informing the funding requirement to complete the Crossrail project (informed by outputs from Delivery Control Schedule 1.2) and did not form any part of the project's assurance.

The KPMG review team joined the meeting, via Teams, to observe the discussion and were welcomed by the Chair. They had also attended the Elizabeth Line Delivery Group meeting on 16 September 2021 as observing key meetings minimised the time needed with the executive management team, allowing them to focus on Elizabeth line delivery.

This was Stuart Westgate's last Committee meeting as he was leaving TfL and the Chair, on behalf of the Committee, thanked him for his valued contribution in helping to shape TfL and Crossrail's integrated assurance approach.

TfL maintained a priority focus on safety. The Chair highlighted that there was a specific agenda item on safety which would be the first item considered at the meeting. She invited Members to raise any safety issues either under the specific agenda item or with the appropriate member of the Executive Committee after the meeting.

## **64/09/21    Declarations of Interests**

Members on the TfL Board confirmed that their declarations of interests, as published on [tfl.gov.uk](https://www.tfl.gov.uk), were up to date. Members, Sarah Atkins and Kathryn Cearnis OBE confirmed there were no additional interests that related specifically to items on the agenda.

## **65/09/21    Minutes of the Meeting of the Committee Held on 15 July 2021**

**The Committee approved the minutes of the Elizabeth Line Committee meeting held on 15 July 2021.**

The Chair advised the Committee that she had also signed all the minutes of the meetings since November 2020.

## **66/09/21    Matters Arising and Actions List**

Howard Carter introduced the paper. All actions from previous meetings had been completed.

In reference to action Minute Reference 49/07/21 (1) on Crossrail Programme Assurance, it was agreed that officers would arrange an assurance activity on Trial Operations between executives and key Line of Defence 1 staff, including Board Members.  
**[Action: Howard Smith]**

**The Committee noted the actions list.**

## **67/09/21 Safety Update**

Mark Wild introduced the paper, which provided an update on safety on the Crossrail project, TfL Rail (MTR EL) and the Infrastructure Manager, Rail for London (Infrastructure) Limited (RfL(I)).

There were no significant operational safety incidents during Periods 3, 4 and 5 2021/22 covered by the report and an update was provided on three minor incidents since the issuing of the report.

Howard Smith provided an oral update on progress in resolving the access improvement plan, which had been established after issues with short notice requests for access to the railway and to equipment rooms, early in Trial Running. Procedures had been clarified and the number of incidents significantly reduced alongside an improved maintenance access programme.

It was agreed that Members would be provided with both project and RfL(I) construction safety data following the meeting, and that this information would be included in future reports. **[Action: Carol Bardell-Wise]**

**The Committee noted the paper.**

## **68/09/21 Project Status Update**

The Commissioner advised the Committee that he remained focused on the successful, timely delivery of the Elizabeth line in accordance with P50 projections, and at the least cost to public funds.

Mark Wild presented the item and the supplementary information on Part 2 of the agenda, setting out an update on the status of the Crossrail project.

Seventeen of the 19 stations shafts and portals had been transferred over ready for supporting Trial Operations. Canary Wharf was in the final stages of re-certification ready for transfer in November 2021. Bond Street would achieve SC2 configuration within the next week and was being de-coupled from the rest of the railway opening in 2022 to speed up work on that station. The drive for delivery was helping to keep costs controlled and costs at Bond Street station were aligned with other aspects of the stations programme.

A planned blockade in October 2021 would enable the commissioning of the latest software update to the system and testing of the tunnel ventilation system with final integration testing in November 2021.

The de-mobilisation of Tier-1 staff and resources was being closely monitored, with a focus on safety and staff wellbeing. The de-mobilisation would also help simplify the assurance and certification process.

Scope work within the stations had been clearly defined and any residual works would be within the control of the operator and maintainer as to what needed to be completed and when, with agreements in place. All targeted Tier 1 de-mobilisation

was scheduled for completion by January 2022 with any critical integration skills retained.

Trains were being incrementally tested from eight to 12 trains per hour to build up staff confidence and familiarity. Train reliability was a critical part of the testing phase.

The Committee would be provided with the details of the Tier 1 de-mobilisation.

**[Action: Mark Wild]**

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **69/09/21 Elizabeth Line Readiness and Transition Update**

Howard Smith introduced the update on the performance of the TfL Rail operational service and the status of the readiness of the Infrastructure Managers for the operations and maintenance of the railway after handover from Crossrail.

Trial Running continued, including running over the transitions to and from Network Rail infrastructure. Drivers were also able to train using simulators located at Old Oak Common Depot.

Significant improvements to the reliability of infrastructure and systems were still required with many issues expected to be addressed by software updates in October and December 2021.

The Chair and Vice-Chair of the Committee had recently attended a day of Trial Running, which had provided a valuable insight.

**The Committee noted the paper.**

## **70/09/21 Finance and Risk Update**

Rachel McLean presented the update on the financial performance at Periods 4 and 5 2021/22 and on risk management progress.

The work to complete the revision of the Anticipated Final Crossrail Direct Cost (AFCDC) had resulted in a £1m increase in the P50 AFCDC, and a series of senior workshops to minimise the Cost To Go had taken place since the previous Committee meeting. These provided opportunities to reduce the forecast but had not yet been fully reflected in the forecast. Risk and contingency budgets continued to be a significant proportion of the forecast delivery costs, reflecting the level of residual risk in the remainder of the project.

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **71/09/21 Project Representative Report**

Stephen Hill introduced the paper on the periodic reports from the Project Representative (P-Rep) on the Crossrail project for Periods 3, 4 and 5 2021/22 and the management responses to these reports.

The exempt Period 5 report had been accepted as a late appendix, and had been circulated in advance of the meeting, as it was important for the Committee to consider the most up to date information. In line with the commitments made by the Mayor for greater transparency on the Crossrail project, copies of the reports were available on the TfL website, with the commercially sensitive material redacted. The Period 5 report would be published shortly.

Stephen Hill congratulated staff on recent progress, including the de-mobilisation schedule and prudent control of works to be completed. The completion of all assurance activities would be challenging. As indicated in other reports on the agenda, train reliability growth and performance were currently below target. The challenges with the tunnel ventilation system were also highlighted.

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **72/09/21 Elizabeth Line Programme Assurance Update**

Lorraine Humphrey introduced the paper, which provided an update on progress with Crossrail Programme Assurance activity.

An updated Integrated Audit and Assurance Plan would be submitted to the next meeting.

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda and endorsed the Line of Defence 3 IIPAG Crossrail Sub-Group plan set out in Appendix 1 to the report.**

## **73/09/21 Members' Suggestions for Future Discussion Items**

Howard Carter introduced the item and the Committee's forward plan. Suggested future agenda items captured during the meeting would be included on the forward plan.

**The Committee noted the forward plan.**

## **74/09/21 Any Other Business the Chair Considers Urgent**

There was no other urgent business.

## **75/09/21 Date of Next Meeting**

The next scheduled meeting of the Committee would be held on Thursday 25 November 2021 at 2pm.

## **76/09/21 Exclusion of the Press and Public**

The Committee agreed to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), when it considered the exempt information in relation to the items on the: Project Status Update; Finance and Risk Update; Project Representative Report; and Elizabeth Line Programme Assurance Update.

The meeting closed at 12.45pm.

Chair: \_\_\_\_\_

Date: \_\_\_\_\_

## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Matters Arising, Actions List and Use of Delegated Authority

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper informs the Committee of progress against actions agreed at previous meetings and any use of delegated authority via Chair's Action since the last meeting on 30 September 2021.
- 1.2 There has been one use of Chair's Action since the last meeting, in relation to the novation of contracts.
- 1.3 Appendix 1 sets out progress against actions agreed at previous meetings.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the Actions List and the use of Chair's Action.**

#### **3 Use of Chair's Action**

- 3.1 Under Standing Order 113, in situations of urgency, the Board delegates to each of the Chairs of any Committees and Panels the exercise of any functions of TfL on its behalf, including the appointment of Members to Committees and Panels. Any use of Chair's Action is reported to the next ordinary meeting.
- 3.2 There has been one use of Chair's Action since the last meeting of the Committee.

##### **Proposed Novations of Contracts**

- 3.3 In 2012 Crossrail Limited entered into a contract for the provision of signalling and control systems for the central operating section of Crossrail with Siemens Public Limited Company (Siemens PLC) and Siemens Rail Automation Limited (Siemens Rail) (the Signalling Contract). In 2013, Crossrail Limited entered into a contract for the provision of communications and control systems for the central operating section of Crossrail with Siemens PLC (the Communications Contract).
- 3.4 As part of a corporate restructuring within the Siemens group, the Siemens contracting entities referred to above transferred their business to Siemens Mobility Limited (Siemens Mobility). Approval was sought for the Signalling Contract and the Communications Contract to be novated to Siemens Mobility.
- 3.5 The use of Chair's Action was considered appropriate, as a decision to enter into the deeds of novation before the date of the next meeting of the Committee was necessary to ensure that any delay did not adversely impact Siemens' ability to support Crossrail Limited to achieve handover dates.

3.6 On 9 November 2021, the Chair of the Committee, following consultation with Members, approved the novation of the contracts under Chair's Action.

**List of appendices to this report:**

Appendix 1: Actions List

**List of Background Papers:**

Minutes of previous meetings of the Elizabeth Line Committee

Contact Officer: Howard Carter, General Counsel  
Email: [HowardCarter@tfl.gov.uk](mailto:HowardCarter@tfl.gov.uk)

Minute No.	Item/ Description	Action By	Target Date	Status/Note
67/09/21	<b>Safety Update</b> Members to be provided with both project and Rail for London (Infrastructure) Limited construction safety data following the meeting, and that this information be included in future reports.	Carole Bardell-Wise	Following the meeting.	Information circulated and included in Safety Report on agenda. Complete.
68/09/21	<b>Project Status Update</b> The Committee to be provided with the details of the scheduled Tier 1 de-mobilisation.	Mark Wild	Following the meeting.	Information circulated. Complete.

## Actions from previous meetings:

Minute No.	Item/ Description	Action By	Target Date	Status/Note
66/09/21 and 49/07/21(1)	<b>Matters Arising and Actions List</b> There should be assurance activity on Trial Operations between executives and key Line of Defence 1 staff, including Board Members.	Howard Smith	Informal briefing held on 2 November 2021.	Complete.
49/07/21(2)	An update on post-Pandemic revenue predictions be provided to a future meeting.	Mark Wild	Informal briefing in February 2022.	On Forward Plan.
56/07/21	<b>Crossrail Complaints Commissioner's Report</b> Ahead of the office of the Commissioner closing, the Chair to be engaged in discussions on how outstanding complaints were either closed out or who they were assigned to.	Chair/Mark Wild	When appropriate	Pending.

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Safety Update

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### This paper will be considered in public

#### **1 Summary**

1.1 This paper provides an update on safety.

#### **2 Recommendation**

**2.1 The Committee is asked to note the paper.**

#### **3 Safety Update**

3.1 This paper includes a performance update for the Crossrail Programme and Infrastructure Manager, Rail for London (Infrastructure) Limited (RfL(I)) for Periods 6 and 7.

3.2 In summary, our safety performance this calendar year has been the most positive historically across the Programme. There have been 24 green weeks in 2021 compared to 18 in 2020. A green week is one where there is no lost time accident or high potential incident. There were 13 significant injuries during 2020 and just three for 2021. This is a result of safety leadership across a combined coalition of the Elizabeth line.

3.3 Regarding the accident performance in the last two periods, there were two lost time accidents on Crossrail of which one was reportable and there were no RfL(I) employee or contractor reportable or lost time accidents.

3.4 Regarding incident performance, there were no Crossrail Reportable Incidents and there was one RfL(I) Reportable Incident.

3.5 The accidents and Incidents are summarised below:

- (a) at the Harrow Road compound, a person twisted their ankle while descending the last step of a staircase. The area was poorly lit because the lighting had been removed that day. This resulted in one day's absence from work. The compound has been demobilised. The accident learning has been shared programme wide;
- (b) at the handed-over Liverpool Street station (Moorgate), a person caught their finger in a door. A residual hazard review has been conducted with London Underground. The door was installed as per the design;

- (c) a Voltage Transformer failed in the Westbourne Park area, this was a reportable event and an investigation is being conducted with support from the manufacturer. A risk assessment has been undertaken for the interim period while the investigation concludes, and a permanent solution is agreed; and
  - (d) at the Bond Street Station Project, there were two incidents during lifting operations, with neither of these incidents causing harm. An exclusion zone was breached, and a load struck a fixed object. A comprehensive review of lifting arrangements has been undertaken. The management of all lifting and supervision on site has been reconfirmed with an assurance regime introduced. The reporting and fair culture throughout the project is extremely positive and has enabled the lessons to be implemented proactively.
- 3.6 The November 2021 SHELТ (Safety and Health Executive Leadership Team) will be its penultimate meeting, aligning with project completion, contractor demobilisation and the start of the Trial Operations phase. Revised arrangements have been agreed with all remaining parties and will be implemented such that health and safety performance remains a key focus area with the leadership team. The Elizabeth Line Safety Board will continue as will safety leadership and engagement with the supply chain.
- 3.7 Coordinated transition planning is being successfully managed with clear lines of responsibility and understanding between Crossrail Limited and RfL(I), TfL and all other relevant stakeholders and IM's.
- 3.8 Since the last report to the Committee, the Crossrail and RfL(I) Accident Frequency Rates are 0.05 and 0.19 respectively. The Crossrail and RfL(I) Lost Time Indices are 0.07 and 0.29 respectively. The High Potential Near Miss rate is 0.36. The industry-recognised frequency rates are calculated over a rolling 13 periods.
- 3.9 The Programme continues to manage the coronavirus pandemic risk with measures implemented by the supply chain remaining in place. The programme has plans for a controlled return to the programme offices, in line with TfL's approach.

**List of Appendices:**

Appendix 1: Crossrail Health and Safety Dashboard P7

**List of Background Papers:**

None

Contact Officer: Mark Wild, Chief Executive Officer, Crossrail  
Email: [MarkWild@tfl.gov.uk](mailto:MarkWild@tfl.gov.uk)

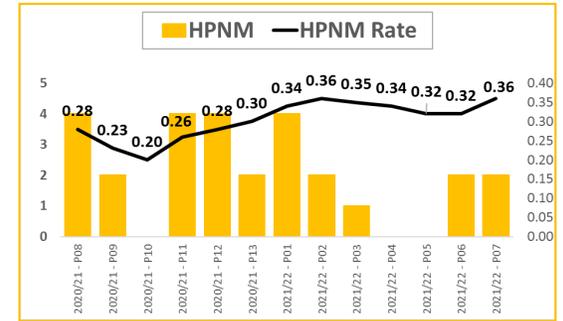
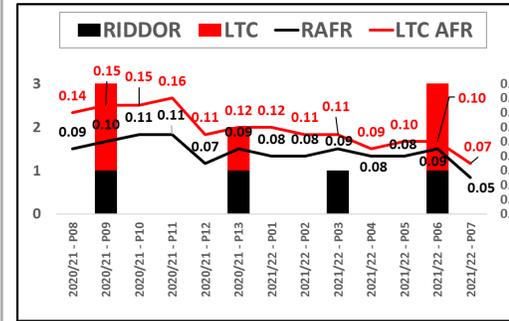
# HEALTH & SAFETY

## Appendix 1

### Performance – Incidents

Incident	P08	P09	P10	P11	P12	P13	P01 21/22	P02	P03	P04	P05	P06	P07	Trend
RIDDOR	0	1	0	0	0	1	0	0	1	0	0	1	0	↓
Lost Time Case	0	2	0	0	0	1	0	0	0	0	0	2	0	↓
HPNM	4	2	0	4	4	2	4	2	1	0	0	2	2	↑
Level 3	8	10	6	10	12	10	10	4	2	2	4	2	5	↑
Level 4	7	12	6	8	13	7	8	9	13	20	7	9	14	↑

### Significant Incidents AFRs

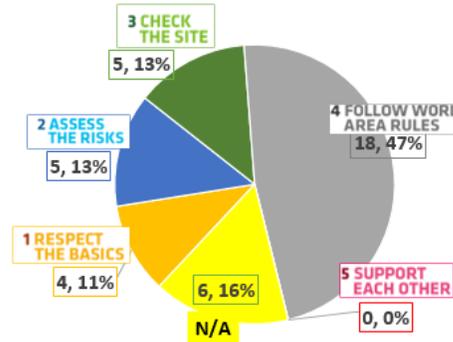


Two Significant Incidents - both HPNMs - were recorded during P07.

- 28th September Bond St. HPNM – During a heavy lifting operation an operative was observed under the lifted load.
- 8th October Bond St. HPNM – Mullion frame hit a MEWP with operators in place.

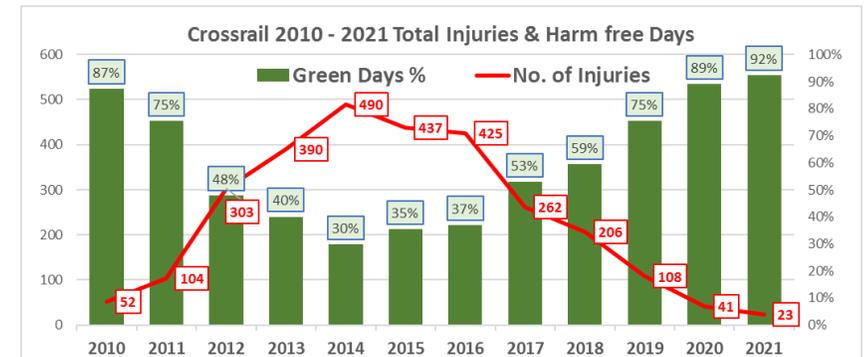
RIDDOR and LTC Accident Frequency Rates (AFR) both show significant reductions at 0.05 and 0.07 respectively, both of these are at their lowest level since early on in the programme. HPNM frequency rate increased to 0.36 due to four HPNMs reported over the last two periods and due to the method of frequency rate calculation using hours worked and incidents over a rolling thirteen periods.

### Golden Rule Analysis P05 21-22 – P07 21-22

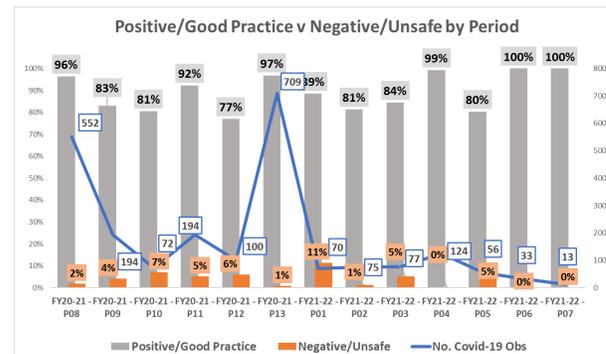


Golden Rule 4 Follow Work Area Rules is the most reported breach over the last three periods with 18 incidents and forty-seven percent of the total. There has been a decrease in incidents recorded as N/A.

### Programme Injury Trends

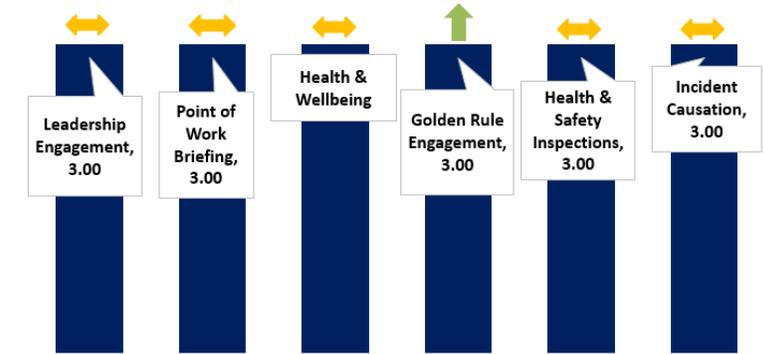


### Interventions – Covid-19 Observations



13 Covid-19 observations were made during P07. one-hundred percent of these observations were Positive / Good Practice.

### Health & Safety Performance Index



### Celebrate – Final Stepping up Week

- Collaborative effort that showed all that has been good about Crossrail.
- Safety Hero awards for excellence.
- Impact of unintended messaging.
- Engagement with roleplay at BOS.

## RFLI Safety Report

### Incident & Accident Reporting (SMIS)

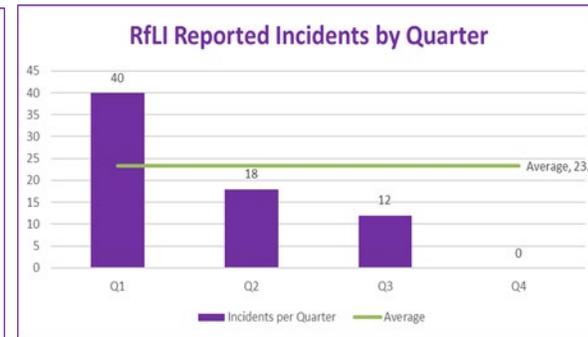
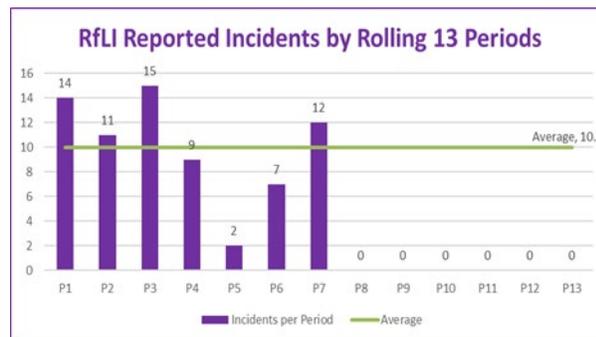
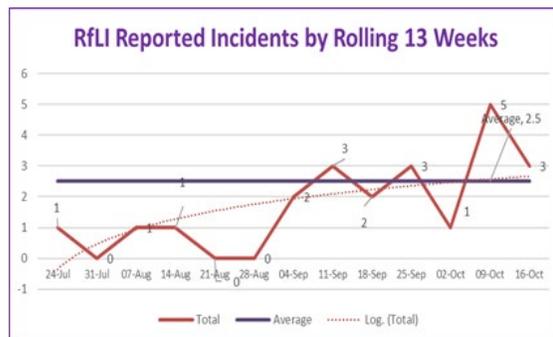
Incident rates analysed by **week** shows a slight increase over time. A spike in reported incidents continues to be monitored for trends.

Periodic reporting shows incidents have increased for P07. Current reporting levels whilst not confirmed indicate this trend is continuing.

### Accident Frequency Rate / Lost Time Injuries / Fatality Weighted Index & RIDDOR

Continue to be reported with improved employee and hours worked data

Note: Rate and Index frequencies are being recalculated based on accurate hours worked being provided.



### PWHR SIF (RCA) STATUS

RCA Status	No. of Risk Control Actions
Accepted	1396
On-Hold	7
Open	6

**On-Hold** means RCA is yet to be transferred to RFLI. Insufficient information available from the designer via CRL. Discussions ongoing.

### Incidents & Accidents;

RFLI weekly reporting chart identifies improvements in variation in reporting, this is as expected during Trials. Periodic data indicates a spike in the week of 09<sup>th</sup> October. Incidents are being monitored for spikes trends.

### Assessment Body: (AsBo)

The latest AR weekly report. AR508 on the System Safety Plan was issued to RFLI this week.

The current status of CAT 1 and CAT 2 observations is set out below.

**21-959 Trial Operations Readiness Audit** – 13 findings to be resolved.

**21-963 Audit of Maintenance/Engineering activity** – Audit report in preparation.

**21-964 Change Management** – 10 findings to be resolved.

### Ongoing Investigations

60 (85%) of all investigation have been concluded with actions being tracked to closure.

11 Investigations are ongoing.

RFLI investigations are have been instigated in the past 7 Days.

### Accident Frequency Rate: (AFR)

0.19

### Fatality Weighted Index: (FWI)

0.014

### Lost Time Injuries: (LTI)

0.289

**RIDDOR:** No RIDDOR was reported in this period.

## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Project Status Update

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the status of the Crossrail project.
- 1.2 Following the initial phase of transition, the Elizabeth Line Delivery Group (ELDG) was formed to ensure appropriate oversight of the delivery of the Elizabeth line by Crossrail and TfL Executive. The ELDG is chaired by the Commissioner. In line with the commitments made by the Mayor for greater transparency of the Crossrail project, the minutes and actions from ELDG are available on our website<sup>1</sup>. Available reports will be uploaded to correspond to the meeting of this Committee.
- 1.3 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplemental paper on Part 2 of the agenda.**

#### **3 Crossrail Update**

- 3.1 Crossrail Limited is in the complex final stages of delivery of the Elizabeth line with Trial Running making good progress and preparations for Trial Operations advancing. The project remains aligned to the scheduled opening of the railway to passengers in the first half of 2022.
- 3.2 The Trial Running of trains through the central tunnels began in May as part of the major railway trials taking place throughout this year. The programme introduced 12 trains per hour (tph) in July, the service level for the opening of the railway, and despite a small number of bedding in issues, overall, it has been positive with the team frequently delivering over 95 per cent of the 12 tph mileage. However, reliability has been lower than what is to be expected in revenue service mainly due to known software defects, much of which are anticipated to be fixed by revenue service as part of the ongoing software releases plan. Trial

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<sup>1</sup> <https://tfl.gov.uk/corporate/publications-and-reports/elizabeth-line-delivery-group>

Running was paused, as planned, during the commissioning blockade and resumed on 27 October.

- 3.3 The ELR100 commissioning blockade commenced on 10 October 2021 which saw the ELR100 software successfully commissioned during what was a 15 day blockade. In line with the aforementioned software release plan, ELR100 is one of the last major software configurations before revenue service and is integral to the programme moving into Trial Operations. It is expected to have fixed a considerable number of the bugs identified during Trial Running and its performance is currently being assessed, now that Trial Running has resumed. Early indications of the effect of the software upgrade on the railway are encouraging and provide confidence that the objectives have been delivered.
- 3.4 The blockade also allowed for the tunnel ventilation system to be updated and this is now almost complete, as well as other key works to the rolling stock, signalling, and fleet roll out.
- 3.5 The final railway integration tests to ensure all of the components work seamlessly together are now almost complete. The tests apply to the tunnel ventilation system, trains, software, signalling and power systems and it is only possible to undertake these at this stage now that the complete railway is available.
- 3.6 Before the end of the year, there will be further changes to the tunnel ventilation system to complete the outstanding functionality of the system software for passenger service. There will also be a smaller scale software update (ELR110) that will sweep up any new issues identified during Trial Running. These final fixes are expected to be small in number but are important in the final completion of the railway for revenue service.
- 3.7 The next major improvement in system reliability is the new Alstom train software (5.3/5.4) which is currently going through its assurance process and is due to be commissioned on the railway by the end of the year. The success of this software will be influential in determining the opening schedule for the railway.
- 3.8 The programme is currently on course to commence the Trial Operations phase in line with the earliest possible forecasted date towards the end of November. A staged approach to Trial Operations has been adopted to build greater resilience into the railway and to allow for the earliest commencement of passenger services next year.
- 3.9 Trial Operations involves testing over 150 real-time operational scenarios to support the readiness of the railway. The railway is an immensely complex system and must work seamlessly to ensure the Elizabeth line is delivered safely and reliably from the point at which passenger services begin.
- 3.10 The central section stations are now at an advanced stage, with eight out of the ten now under the care of TfL and are ready to support Trial Operations. Tier 1 contractors are beginning to demobilise from site. To date, Tier 1 contractors from Farringdon, Tottenham Court Road and Woolwich stations have started the demobilisation process, along with those at Paddington and Liverpool Street stations.

- 3.11 The next station to be transferred to TfL is Canary Wharf where the schedule has been adjusted to reflect the introduction of the staged approach to Trial Operations. Final modifications to the safety systems are being carried out and it is expected to be transferred later this year.
- 3.12 Bond Street station achieved its readiness to support Trial Operations on 8 October 2021. This is a significant milestone for the station and for the wider programme. The team at Bond Street are now working on a plan to get the earliest opening date for the station. The possession of the oversite development and urban realm has also recently been handed to the developer.
- 3.13 Following the completion of the platform extension works at Liverpool Street mainline station, work is now underway on the transition to Full Length Unit operation on the Liverpool Street to Shenfield service.
- 3.14 Following the completion of station works at Hayes & Harlington in September 2021, Network Rail's station enhancement works on the west are largely complete. A significant benefit of these works is that passengers are now able to make step-free journeys across TfL Rail between Paddington, Reading and Heathrow.
- 3.15 Enhanced station upgrade works are progressing in the east at Ilford and Romford. The glass façade is now complete at Ilford and lift cars also installed at both sites. The target for entry into service of the new station buildings is February 2022 and Network Rail continues to monitor this to drive performance.

**List of Appendices to this report:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda.

**List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Elizabeth Line Readiness

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the performance of the TfL Rail operational service and the status of the transition and readiness of the Infrastructure Managers for the operations and maintenance of the railway after handover from Crossrail.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper.**

#### **3 Performance of Operational Service**

- 3.1 TfL Rail continues to deliver a good service with the Public Performance Measure (PPM) beating target during period 7, the four-week period between 19 September and 16 October 2021. We compared favourably against the rest of the industry with only Merseyrail and London Overground performing better. The eastern section of the line achieved 97.5 per cent with the western section achieving 93.0 per cent of trains meeting their reliability target. The overall Moving Annual Average trend also continues to be better than target at 95.3 per cent.
- 3.2 Passenger services between Reading and Heathrow continue to be operated by nine-car Class 345 trains. The current train control software is not delivering the expected reliability, but defects are generally rectified by a system reset and containment measures put in place by the operator MTR Elizabeth line (MTREI) which has limited the impact to passenger service. Testing is complete on a reliability-focussed software version for delivery by train manufacturer Alstom in December 2021, which is forecast to deliver a significant reliability improvement as it is loaded onto the fleet in January 2022.
- 3.3 Six nine-car Class 345 trains are operating in passenger service between Shenfield and Liverpool Street, supplementing seven-car Class 345 and 'legacy' Class 315 trains. The transition of the Liverpool Street to Shenfield service to a full nine-car Class 345 operation, with up to 22 trains commenced on 1 November 2021 and will complete by the end of December 2021.

#### **4 Operational Readiness**

- 4.1 Trial Running has resumed in the Central Operating Section following the planned two-week blockade to allow for the vital commissioning of one of the last major

software configurations before Revenue Service (ELR100 Signalling Software update). In the initial period since the software update, we have seen a significant improvement in performance of the 12 trains per hour (tph) timetable.

- 4.2 Sustained reliability with the 12tph timetable is critical to allow us to move into the Trial Operations (TO) phase. The improved reliability enables our operational teams to increase their understanding on how to manage the service, utilise the infrastructure available and deal with issues as they arise, more effectively.
- 4.3 The countdown for TO is underway towards late November. We will be undertaking a staged approach to build greater resilience and to allow for the earliest commencement of passenger services next year. Eight of the ten central stations are now under our control with Canary Wharf due to be handed over in the autumn. Further work will take place on the tunnel ventilation system and the next software upgrade (ELR110); both critical for the second stage and a key enabler to progress with the next phase of volunteer exercises in the New Year. A series of project gates has been established as “Go/No-Go” decision points before moving into TO and beyond, towards Revenue Service.
- 4.4 The operations training and assessment programme ‘end to end’ process review has been completed with benefits including a reduction in training time of nearly two weeks, as well as supporting further development of the Route Control Centre team through TO.
- 4.5 Following completion of station works at Hayes & Harlington, providing a new station building and step free access on 14 September 2021, Network Rail station enhancement works on the west are nearly complete. This complements Acton Main Line, Ealing Broadway, West Ealing, Southall, and West Drayton stations which have already entered into passenger service. Enhanced station improvements at Ilford and Romford are progressing, with the glass façade now complete at Ilford and lift cards installed at both sites. The stations are expected to be completed in early 2022, and Network Rail continues to monitor this to drive performance.

## **5 Joint Trial Operations Plan**

- 5.1 We have received provisional endorsement of the Joint Trial Operations Plan (JTOP) at the Interim Technical Assurance Panel (ITAP). This follows the decision to approach TO in two phases. This phased approach will enable final testing and software adjustments to the Tunnel Ventilation System (TVS) before Christmas, providing time for the subsequent assurance approvals to be in place.
- 5.2 A ‘gate’ has been scheduled for December 2021 to provide the conditional Go/No Go for Phase 2 subject to the successful completion of the TVS works. Once approved, this will allow us to carry out planned volunteer evacuation exercises in January 2022 including the emergency services.
- 5.3 The JTOP is undergoing final updates in response to stakeholder commentary and will proceed to the Trials and Operations Review Group for final approval before being shared with ITAP.

## **6 Reliability review points**

- 6.1 As part of the decision-making process leading to TO and Revenue Service, the Elizabeth Line Reliability Board will consider Confidence Review Points focusing on reliability and operational performance against expected performance outputs. Confidence Review Point 6 was considered in October 2021 with a 'red' rating based on the need to see improvements following the ELR100 software upgrade – as mentioned under 4.1 we have started to see significant reliability improvements since the software upgrade. The next Review Point is due later in November.

## **7 TfL Residual Works Programme**

- 7.1 The residual works team continue to progress a number of pre and post revenue service activities across the London Underground and Rail for London (Infrastructure) Limited estate and are supporting the decommissioning of Whitechapel temporary ticket hall.

### **List of Appendices to this report:**

None

### **List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Finance and Risk Update

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the financial performance at Period 7 2021/22 and on risk management progress.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL and other parties. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda.**

#### **3 Financial Performance**

- 3.1 Spend in Period 7 was £45m and is £356m for the year to date. The period spend was £10m below the Delivery Control Schedule 1.2 (DCS1.2) Budget and the Programme is £14m below the DCS1.2 Budget for the year to date.
- 3.2 On average the Programme has seen an underspend of £8m a period over the past year. This average has reduced to £5m since DCS 1.2 was set in Period 5.
- 3.3 The number of Team CRL full time equivalent staff is 697 (note this excludes any consultancy resource). This was 14 lower than had been forecast in the DCS1.2 Workforce Plan, driven by vacant roles.

#### **4 Anticipated Final Crossrail Direct Cost (AFCDC)**

- 4.1 The current P50 AFCDC is £15,940m, unchanged from DCS1.2.
- 4.2 The P50 AFCDC is currently £151m above the additional funding of £825m, unchanged from DCS1.2. When the £825m additional funding was confirmed, the funding package was £91m lower than the P50 AFCDC at the time.
- 4.3 At higher levels of probability, current estimates of up to £1.1bn additional funding are consistent with previous estimates.

- 4.4 Although potential new cost pressures are being prudently recognised in the AFCDC as they arise, the programme continues to maintain substantial risk and contingency budgets. Actions are ongoing across all sectors of the Programme to identify opportunities to reduce the AFCDC, mitigate cost pressures and deliver the Programme within the £825m funding.

## **5 Funding**

- 5.1 On 30 November 2020, a funding and financing agreement was reached between TfL, GLA and the Government providing £825m of additional funding for the Crossrail Programme.
- 5.2 Following the funding and financing agreement of November 2020 and the TfL Board's approval of Programme and Project Authority, as at Period 7, net Programme and Project Authority is £15,536m.
- 5.3 Of the additional £825m funding, £572m has been drawn down as at Period 7.

## **6 Alternative Delivery Model (ADM)/Residual Works Team (RWT)**

- 6.1 An ADM/RWT working group has been set up which has engaged senior management across the TfL Group to ensure that appropriate handshakes between future operators and the Project have taken place in relation to scope delivery.
- 6.2 The initial focus has been on clarifying the requirement for the remaining items of scope and ensuring delivery timescales are aligned to key project milestones, particularly those items needed for Revenue Service.
- 6.3 The ability to accelerate the scope transfer to the ADM/RWT is key to facilitating the demobilisation of the Tier 1 contractors.

## **7 Risk**

- 7.1 There are 17 Level 1 Programme Risks at Period 7.
- 7.2 The Level 1 Programme Risks summarise the significant risks that face the Programme. The review and update of Level 1 risks is now a well-established part of the Executive Group cadence, with a substantive review of risks and interventions on a bi-weekly basis. Risks are also tracked and monitored by the Elizabeth Line Delivery Group.

### **List of appendices to this report:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda.

### **List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Project Representative Report

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the periodic reports from the Project Representative (P-Rep) on Crossrail for Periods 6 and 7. The P-Rep report for Period 7 has been received but there has not been enough time since its receipt and the publication of this paper for the report to be considered and a management response agreed. As provided for under section 100B(4)(b) of the Local Government Act 1972, the Chair has agreed to the late submission of the Period 7 report and management response to enable Members to consider the most up to date information. The exempt appendix will be sent to Members ahead of the meeting and a redacted copy will also be published.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the report and the supplemental paper on Part 2 of the agenda.**

#### **3 Project Representative**

- 3.1 The P-Rep is in place to provide the Sponsors, TfL and the Department for Transport, with oversight of project delivery, advise and raise points of challenge to the Sponsors and scrutinise progress.
- 3.2 In line with the commitments made by the Mayor for greater transparency of the Crossrail project, the most recent P-Rep reports are included as part of the regular update to the Committee and are available on our website<sup>1</sup>.
- 3.3 As with all the P-Rep reports, it has been necessary to make some redactions to the reports prior to publication to protect commercially sensitive material. We have sought to keep such redactions to a minimum. Unredacted versions of the P-Rep reports have been included in the paper on Part 2 of the agenda.

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<sup>1</sup> <https://tfl.gov.uk/corporate/publications-and-reports/crossrail-project-updates>

- 3.4 In the Period 6 report (21 August 2021 to 17 September 2021), the P-Rep highlighted the following issues for particular Sponsor attention:
- (a) past general concerns remain with: schedule, cost, and risk; integrated systems testing; assurance delivery; reliability growth; and stations completion;
  - (b) the plan for Trial Operations is undergoing significant change to accommodate emerging issues, but it cannot be made robust until the October 2021 Blockade outcomes are properly understood;
  - (c) overall reliability remains low and improvement relies upon major software upgrades to signalling, trains, tunnel ventilation and communications systems, which extend into early 2022;
  - (d) deferring train evacuation exercises to early 2022 threatens Trial Operations completion, Stage 3 Passenger Service start, and reduces the reliability growth opportunity before Stages 5B and C; and
  - (e) prolonged completion of systems integration and safety assurance threatens opportunities to realise reductions in risks and cost provisions.
- 3.5 The P-Rep observations are shared with Crossrail and are discussed in detail by Crossrail, P-Rep and the Commissioner at the regular meetings of the Elizabeth Line Delivery Group. Crossrail also produces a written response to the P-Rep report that is included with the P-Rep reports on our website (with an unredacted version being included in the paper on Part 2 of the agenda).

**List of Appendices to this report:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda

**List of Background Papers:**

None

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## Elizabeth Line Committee



Date: 25 November 2021

Item: Elizabeth Line Programme Assurance Update

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### This paper will be considered in public

## 1 Summary

- 1.1 This paper reports on progress with programme assurance activity across the Elizabeth Line Three Lines of Defence (3LoD) Integrated Assurance Framework (IAF) discussing: confidence of delivery; adequacy of assurance coverage; and exceptional risks requiring escalation.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

## 2 Recommendations

- 2.1 **The Committee is asked to note the paper and the supplemental information in Part 2 of the agenda and approve the assurance activities set out in Appendix 5.**

## 3 Background

- 3.1 The IAF was established in June 2019, based on a 3LoD model. This model is now being updated to cover all of the elements of the Elizabeth line comprising:
  - (a) Line 1 – Management functions of Crossrail, TfL Rail for London Infrastructure Limited and key interfaces;
  - (b) Line 2 – Elizabeth Line Project Programme Assurance (PPA) team; and
  - (c) Line 3 - TfL Internal Audit and (as of January 2021) a sub-group of the Independent Investment Programme Advisory Group (IIPAG-EL).
- 3.2 This paper reports specifically on Line 2 (PPA), Line 3 (Internal Audit) and Line 3 (IIPAG-EL) assurance progress.
- 3.3 The teams meet periodically with a panel of advisers and the Project Representative to ensure that assurance is carried out by the right team, at the right time and to avoid duplication and minimise overlap of effort.

## **4 Line 2 (PPA) Assurance**

- 4.1 As part of the transition arrangements between TfL and Crossrail, Line of Defence 2 (LoD2) has now transferred to TfL's Risk and Assurance Directorate. Their work is being expanded to cover all the Elizabeth line entities.
- 4.2 Overall, the Elizabeth line is now at a more mature level of readiness and, while there are several performance and reliability issues to be addressed, there is increased confidence that the railway is on track to Revenue Service, and the question is now one of the precise timing of its opening.
- 4.3 LoD2 assurance continues to be undertaken, principally, on a real-time, continual assurance basis, through participation in project meetings and related activities, and providing real-time feedback to the project and operational teams. Additionally, where appropriate, a series of Targeted Assurance Reviews will be recommended where there is evidence of a number of risks to either the entry into Trial Operations or Revenue Service or to the live operation while in Revenue Service. Formal reporting is through the LoD2 Periodic Assurance Review (PAR) Reports.
- 4.4 Since the last meeting of the Committee, LoD2 has issued PAR Reports covering Periods 5, 6 and 7 2021/22, which have provided input to the periodic Integrated Assurance Report to the Elizabeth Line Delivery Group and this Committee.
- 4.5 In relation to the timeline to complete, based upon our Period 7 assessment, it is the opinion of LoD2 assurance that while the schedule for completing Crossrail is under significant pressure, considering the balance of risks, it is currently most likely to be on-track to open within 'first half of 2022'. Positive progress has been made in the last period in readiness for Trial Operations. The Trials Operations plan has been split into two phases to enable Phase One to start late November 2021 with the lower risk trials using staff only and Phase Two to commence in January 2022 following the completion of a number of critical activities during December 2021. This enables mass evacuations using large numbers of public volunteers to be carried out. In taking this approach, the integrity of the Trial Operations plan remains intact, while also allowing the completion of critical works.
- 4.6 Regarding cost to complete, current costs and financial commitments are still within the approved budget. Costs to complete the works remain under pressure but cost reduction works are ongoing, as are contract close out negotiations with the Tier 1 suppliers ensuring all remaining costs are fully understood and provisioned for.
- 4.7 On completion of the works, the project has continued to make significant progress since the last report, key progress highlights including:
- (a) the introduction of a new release of Siemens software ELR100, improving the system reliability performance;
  - (b) Trial Running in the Central Operating Section continues with increasing periods of 12 trains per hour;

- (c) stations progress continues with the total transfer of responsibility for eight stations to their respective Infrastructure Manager; four stations to Rail for London (Infrastructure) Limited – Paddington, Woolwich, Custom House and Abbey Wood; and four stations to London Underground (LU) – Tottenham Court Road, Farringdon, Liverpool Street and Whitechapel; and
  - (d) maintenance productivity and access continue on the trajectory to support projected Revenue Service requirements.
- 4.8 Key indicators of maintenance performance are being refined to provide greater clarity around the average fault identification and diagnosis interval and the overall fault-to-fix cycle time.
- 4.9 The upcoming LoD2 assurance activity is currently being planned and approval of the plan will be sought with all key stakeholders.

## **5 Line 3 (TfL Internal Audit) Assurance**

- 5.1 The Crossrail Internal Audit Plan for 2021/22 was approved by the Crossrail Audit and Assurance Committee on 16 March 2021.
- 5.2 In Quarter 2 2021/22 (Q2) we issued three reports, have two in progress and have a number of audits being planned to commence in Quarter 3 2021/22 (Q3).

### **Audit Delivery**

- 5.3 Summary information of the three reports issued in Q2 are set out below.
- 5.4 The Alternative Delivery Model Strategy audit was found to be “Requires Improvement” and there was one high priority issue which was around a lack of management oversight of any issues which may arise in the delivery of the strategy.
- 5.5 The Monitoring Professional Service and Framework Development Consultants audit was found to be “Adequately Controlled”. There were one medium and three low priority issues. The medium issue was around inconsistent completion of Works Orders.
- 5.6 The Management of Works Deferred to LU audit was found to be “Requires Improvement” and identified two high, two medium and one low priority issue. The high priority findings are as follows:
- (a) Crossrail had not confirmed and communicated the full scope and programme of planned works to be transferred to the Residual Works Team (RWT); and
  - (b) the RWT sponsorship team does not have an equivalent representative at Crossrail to liaise with.
- 5.7 A full list of audit reports issued during Q2 is included as Appendix 1. Audits in progress at the end of Q2 is included as Appendix 2, work planned to start in Q3 is included as Appendix 3, and details of changes to the Audit Plan is included as Appendix 4.

## **Management Actions**

5.8 There were no actions overdue.

## **Changes to the Audit Plan**

5.9 Line of Defence 3 (LoD3) (TfL Internal Audit) regularly review and update the Audit Plan throughout the year, in liaison with management, to reflect changing business priorities. There was one change to the plan in Q2.

## **6 Line 3 (IIPAG-EL) Assurance**

6.1 The terms of reference of the IIPAG-EL sub-group require the group to provide a look ahead of its proposed areas of interest and work. The work plan has been integrated into the overall Integrated Audit and Assurance Plan, which is maintained by LoD2 and is reviewed and coordinated regularly within the Elizabeth Line Programme Assurance Group coordinated by LoD2/ PPA. Progress with the three main areas of focus is summarised as follows:

- (a) Baseline 1.2 (BL1.2) – the sub-group has received regular updates from LoD2, the Project Representative and other stakeholders with a particular interest in the transition period between Trial Running and Trial Operations. Details have been reviewed and feedback provided to the Trial Operations Readiness review. A number of recommendations were made together with LoD2 in support of the transition to Phase 1 of Trial Operations;
- (b) supporting the work of the Railway Assurance Board - Crossrail (RAB-C) and its successor, the Integrated Technical Assurance Panel (ITAP) – the sub-group has engaged with RAB-C and ITAP, gaining an understanding of the planning arrangements and implications for closing out the remaining assurance dependencies. This continues to be a key area of focus for the Assurance team; and
- (c) digital railway – the sub-group has completed its review of this area including an assessment of cyber security concerns.

6.2 The overall assessment by LoD3 (IIPAG-EL sub-group) is that the overall assurance framework has continued to operate effectively over the last quarter.

## **7 Integrated Audit and Assurance Plan**

7.1 The 3LoD IAF maintains an integrated plan of assurance activity coordinated through the Elizabeth Line Programme Assurance Group forum. The areas proposed to be covered prior to Revenue Service is attached as Appendix 5.

### **List of Appendices to this report:**

- Appendix 1: Line 3 (TfL Internal Audit) Reports issued by the end of Q2 2021/22
- Appendix 2: Line 3 (TfL Internal Audit) Work in progress at the end of Q2 2021/22
- Appendix 3: Line 3 (TfL Internal Audit) Work due to start in Q2 2021/22
- Appendix 4: Line 3 (TfL Internal Audit) Changes to the 2021/22 Audit Plan
- Appendix 5: Audit and Assurance List

Supplemental information on Part 2 of the agenda.

**List of Background Papers:**

None

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## Elizabeth Line Committee

### Internal Audit reports issued in Q2 2021/22

### Appendix I

- There were three reports issued during the quarter

Enterprise Risk	Directorate	Ref	Audit title	Summary of Finding	Conclusion	H	M	L
ERI4 Opening of the Elizabeth Line	Crossrail	20 504	Alternative Delivery Model Strategy	There was one high priority issue which was around a lack of management oversight of any issues which may arise in the delivery of the strategy.	Requires Improvement	1	1	0
ERI4 Opening of the Elizabeth Line	Crossrail	20 511	Monitoring Professional Service and Framework Development Consultants	There was one medium and three low priority issues. The medium issue was around inconsistent completion of Works Orders.	Adequately Controlled	0	1	3
ERI4 Opening of the Elizabeth Line	Crossrail	20 502	Management of works deferred to LU	The audit identified two high, two medium and one low priority issue. The high priority findings are as follows: 1) Crossrail had not confirmed and communicated the full scope and programme of planned works to be transferred to the Residual Works Team (RWT); 2) the RWT sponsorship team does not have an equivalent representative at Crossrail to liaise with.	Requires Improvement	2	3	1

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## Elizabeth Line Committee

### Work in progress at the end of Q2 2021/22

### Appendix 2

- There were two audits in progress at the end of the quarter

Enterprise risk	Directorate	Ref	Audit title	Objective	Current Status
ER14 Opening of the Elizabeth Line	Crossrail	20 507	CRL HSE framework	To provide assurance over the adequacy and effectiveness of the Health, Safety and Environment framework.	In Progress
ER14 Opening of the Elizabeth Line	Crossrail	21 062	Disposal of Temporary Assets	To provide assurance that the controls around the disposal of temporary assets are adequate and effective.	In Progress

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## Elizabeth Line Committee

### Work planned to start in Q3 2021/22

### Appendix 3

- There are six audits planned to start during the quarter

Enterprise risk	Directorate	Ref	Audit title	Objective
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 048	Crossrail Complaints Commissioner Accounts	Provide assurance on the accuracy of the Crossrail Complaints Commissioner Accounts for 2020/21.
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 049	Employer's Completion Process	To provide assurance that the controls around the Employer's Completion Process are effective.
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 050	Management of Crossrail direct contracts	To provide assurance that the controls around the management of Crossrail direct contracts are adequate and effective.
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 051	Information Management and Transfer	To review the effectiveness of controls around information management and transfer from Crossrail to TfL.
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 053	Organisational Effectiveness	To provide assurance that the Elizabeth line organisation governance is adequate and effective.
<b>ER14 Opening of the Elizabeth Line</b>	Crossrail	21 061	Demobilisation of Tier 1 Contractors -phase 2	To provide assurance that the controls around Tier 1 contractor demobilisation are adequate and effective.

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## Elizabeth Line Committee

### Changes to the 2021/22 audit plan

### Appendix 4

- There was one change to the plan since the last Committee: one cancellation

Ref	Audit Title	Status	Audit Comments
21 054	Transition of Crossrail people	Cancelled	This audit scope will be incorporated into the Organisational Effectiveness audit (21 053) and therefore is cancelled as a separate audit.

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Appendix 5

# Audit and Assurance List

## November 21

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# Audit and Assurance – Areas to be covered

Priority	Topic	Targeted Review / Continuous Assurance	Who	When
1	Reliability of Performance (System, Train, Integration)	Continuous Assurance	LoD2 (Line of Defence 2 Assurance) / IIPAG (Independent Investment Programme Advisory Group)	Ongoing
2	Romford Control Centre (RCC). Resilience of team (numbers, training, capacity) to deal with busy operations and incidents (in view of number of Operational Restrictions, Alarms during the transition)	Targeted Review	LoD2 / IIPAG	Nov/Dec
3	Gate process for readiness assessment as we go through the Phases of Trial Operations, Revenue Service and into Stage 5b, c	Continuous Assurance	LoD2 / IIPAG	Ongoing
4	Assurance and Approvals for entry into Trial Operations and Passenger Service – including ORR(Office of Rail and Road), RfLI (Rail for London Infrastructure) acceptance	Continuous Assurance	LoD2 / IIPAG	Ongoing
5	RFLI Maintenance effectiveness (People, Process, Systems, Suppliers)	Targeted Review	LoD2 / IIPAG	Dec/Jan
6	Schedule review – Assurance of the Schedule and Cost of the revised schedule	Continued Assurance	LoD2	Ongoing
7	TfL (Transport for London) Procurement and Supply Chain Capacity to take on the procurement of Elizabeth line’s existing contracts	Audit	Audit Team	Dec/Jan
8	Assurance of works handed over to the Residual Works team (scope, cost, risk)	Project Assurance	TfL Project Assurance	TBC
9	Information transfer – (excluding asset data), emails, contract	Audit	Audit Team	Dec/Jan

# Audit and Assurance – Areas to be covered

Priority	Topic	Targeted Review / Continuous Assurance	Who	When
11	Operational Readiness (people, process, interfaces) of all parties to receive the Elizabeth line (RFLI, London Underground, Network Rail, TfL, MTR) as we integrate the later Stages 5b, 5c	Targeted Review	LoD2 / IIPAG	Feb/Mar
12	Management of Direct Contracts (Bond Street and Canary Wharf) <b>(Under Review due to potential overlap)</b>	Audit	Audit Team	Feb/Mar
13	Organisation Effectiveness <b>(Under review due to potential overlap)</b>	Audit	Audit Team	Nov/Dec

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Enterprise Risk Update – Opening of the Elizabeth Line (ER14)

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**This paper will be considered in public**

### **1 Summary**

1.1 As part of TfL’s risk management process, the Elizabeth Line Committee, oversees Enterprise Risk 14 (ER14) “Opening of the Elizabeth line”. This paper describes the key risks to the timely opening of the Elizabeth line provides an update on how TfL manages the risk.

### **2 Recommendation**

2.1 **The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda**

### **3 Background and Current Status**

3.1 Although there are a number of distinct stages to the opening of the Elizabeth line, ER14 refers to further delay in the scheduled opening of the Central Section between Paddington and Abbey Wood in the first half of 2022. ER14 will be further developed to reflect the remaining opening stages following opening of the Central Section.

3.2 Potential causes of delay to the opening include the remaining challenges of delivering the Crossrail project including testing and commissioning, integration of the systems and proving reliability of the railway. Additional causes include the readiness of the operator and contractual relationships including retaining critical resources.

3.3 We consider the risk to be adequately controlled, with probability of delay to the scheduled opening of the Elizabeth line in the first half of 2022 low with the current modelling results. However, we recognise further delays to opening of the railway would significantly adversely impact our customers, finances and the confidence of stakeholders. As such, despite the available controls and actions identified, the target assessment remains outside of tolerance. This is expected given the significance of the railway for TfL, London and our customers.

- 3.4 Controls and actions being taken to address the risk include the support provided to the Crossrail executive team to unlock issues and drive readiness across TfL and the development of management and reporting tools to maintain a close oversight of the schedule, costs and readiness status. There is also active collaboration with the supply chain to strengthen commercial and project management arrangements, maintain competencies and retain critical resources. Appropriate governance and assurance arrangements are in place to provide oversight, timely decision making and challenge by a range of independent experts.
- 3.5 Since the last update to ER14 in 2020, TfL has identified six Level 1 strategic risks that are linked to ER14 and other Enterprise Risks. Programme risks continue to be managed and reported by Crossrail and are reported separately to the Elizabeth Line Delivery Group.

**List of appendices to this report:**

Exempt supplemental information is contained in a paper in Part 2 of the agenda

**List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 25 November 2021

**Item:** Members' Suggestions for Future Discussion Items

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**This paper will be considered in public.**

### **1 Summary**

1.1 This paper presents the current forward plan for the Committee and explains how this is put together. Members are invited to suggest additional future discussion items.

### **2 Recommendation**

2.1 **The Committee is asked to note the forward plan and is invited to raise any suggestions for future discussion items.**

### **3 Forward Plan Development**

3.1 The Board and its Committees and Panels have forward plans. The content of the plans arises from a number of sources:

- (a) standing items for each meeting: minutes; matters arising and actions list; and any regular reports, including the Project Representative report;
- (b) regular items which are for review and approval or noting;
- (c) matters reserved for approval or review; and
- (d) items requested by Members: The Chair of the Committee will regularly review the forward plan and may suggest items. Other items will arise out of actions from previous meetings (including meetings of the Board or other Committees and Panels) and any issues suggested under this agenda item.

### **4 Current Plan**

4.1 The current list of standing items is attached at Appendix 1. Like all plans, it is a snapshot in time and items may be added, removed or deferred to a later date.

#### **List of appendices to this report:**

Appendix 1: Elizabeth Line Committee Forward Plan 2021/22

#### **List of Background Papers:**

None

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## Elizabeth Line Committee Forward Plan 2021/22

## Appendix 1

**Membership:** Heidi Alexander (Chair), Anne McMeel (Vice-Chair), Professor Greg Clark CBE, Dr Nelson Ogunshakin OBE, Mark Phillips, Sarah Atkins, Kathryn Cairns OBE (Department for Transport Representative)

<b>Standing Items</b>		
Safety Update	Commissioner	
Project Status Update	Crossrail Chief Executive	
Elizabeth Line Readiness	Commissioner	
Project Representative Report	Crossrail Chief Executive	
Elizabeth Line Programme Assurance Update	Director of Risk and Assurance	
Finance and Risk Update	Chief Finance Officer, Crossrail	
<b>23 March 2022</b>		
Complaints Commissioner for Crossrail Final Report	Chief Finance Officer, Crossrail	

### Dates of Future Meetings

26 January 2022

23 March 2022

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